Episode Title: Ticks on the Rise, Part 2: Prevention and Detection for Farmers

Topic: Tick Prevention, Symptoms, and Detection

Summary: In this episode, we continue our conversation on the growing threat of tick-borne diseases for farmers across Iowa and the Midwest. Building on our previous discussion with Dr. Kathryn Dalton from the University of Iowa College of Public Health, this episode focuses on practical steps farmers and outdoor workers can take to reduce their risk of tick-borne disease. Dr. Dalton also discusses the complexity of tick-borne diseases, including co-infections and emerging conditions that can complicate treatment. We will hear about a new research study aimed at better understanding the risks, behaviors, and prevention needs of Midwest farmers. Listeners are invited to participate and contribute to efforts that could improve protection for agricultural communities (link to study included in the resources).

Expert: Kathryn Dalton

Episode Quote:

"Don't just rely on tick removal—use multiple prevention methods, because some ticks are as small as a poppy seed and very easy to miss."

– Kathryn Dalton, PhD, Associate Professor, University of Iowa College of Public Health in the Department of Occupational and Environmental Health

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Transcript

00:10 E Ritchie

Welcome to the *FarmSafe* Podcast brought to you by the Great Plains Center for Agricultural Health. In the blink of an eye, an injury can change your life and your farm forever. During each episode, we share first-hand stories and real-life tips for making safer and healthier decisions while on the farm.

00:33 E Ritchie

In our last episode, we talked about why tick-borne diseases are becoming a growing concern for farmers across Iowa and the Midwest. Today, we're continuing that conversation with Dr. Kathryn Dalton from the University of Iowa College of Public Health.

This time, we're focusing on practical questions: How can farmers protect themselves? What symptoms should people watch for? Why can diagnosis be so challenging? And what new research could help improve prevention moving forward?

01:04 E Ritchie

In terms of prevention, how can farmers protect themselves and their families? What are some general prevention measures that you would recommend?

01:13 K Dalton

Yeah, that's a really important question. And I will say this is an area that we don't know prevention measures that are targeted specifically to farmers. However, we can use general knowledge that we have learned from rural residents overall and apply those to our Iowa farmers and farm families.

First is clothing, which I like to think of long and light. long sleeve, long pants, ideally tucking your pants into your socks. And that's basically to minimize the amount of skin that is shown. And then light-colored clothing. Not that that is a deterrent to ticks, but it's for us because it makes them easier to see if there is a tick crawling on, let's say a white t-shirt compared to a black t-shirt. So pretty simple. Now there is a lot of different repellents that we can use to avoid these ticks. Repellents for yourself such as DEET-based

products. There are ones you can use on the clothing such as permethrin ingredient products. And there's also repellents for your home and yard to kind of protect your areas.

02:27 K Dalton

Another big thing that people forget about is your pets. Make sure your pets are on flea and tick because they can be a possible source of ticks and even bring these insects inside to your home. And so, it's important to protect them as well too. One prevention measure that you'll hear a lot about is doing frequent tick checks. So actually, looking for these ticks and if they are attached to you. Especially after spending time outdoors or doing any risky activities. And I'm not minimizing the importance of that. It is very essential, especially considering that for diseases like Lyme disease, the tick actually has to be attached for up to 48 hours in order to transmit the diseases. So, if you're catching it after just a few hours of being outside, that drastically, drastically minimizes your risk of getting these tick-borne diseases.

03:27 E Ritchie

Is that specific to Lyme disease? Are there any that can transmit certain diseases right off the bat? Or is there typically a minimum amount of time?

03:39 K Dalton

Yes, that's a great question. And it is very variable by disease condition. The 48 hours is just specific to Lyme. A lot of the other infectious diseases though do have a waiting period, sometimes a few hours, sometimes longer like these one or two days such as Lyme disease. However, there are some that are more of an immediate issue. I mentioned the alpha-gal, that autoimmune condition.

Also, there are ticks here that cause what's known as tick paralysis, which as the name implies, is the tick bites you and your muscles are frozen and that is an immediate condition. So, it's not a general blanket statement, however, it will certainly help with a lot of disease conditions. Doing tick checks absolutely are important. The problem is though, is that it's a lot harder in theory than what we envision.

04:36 K Dalton

I mentioned how ticks go through different life stages. You have adult ticks. But then you also have these nymph ticks, these teenage ticks, and they are very, very small. They are the size of a poppy seed. So, think of a poppy seed that's behind your knee or in your groin armpit area, which we know are regions where ticks like to hang out on our bodies. You can envision that it would be very, very challenging to detect that. And if you do detect it to remove that small little poppy seed on your body.

That's why don't just rely on tick removal. Use those other prevention methods. Also, something else you can do if you're concerned is to actually just take a shower after you come back from these outdoor activities. If the tick isn't 100% fully attached, having that water flushed out using shampoo uh has also been shown to minimize those ticks that are attached to you.

05:40 E Ritchie

The other thing that I learned about a couple years ago that was surprising to me was it's important to know that not all cases of Lyme disease will you get a bullseye rash. I think we rely pretty heavily on that to let us know, especially with these like nymph ticks that are so tiny that you might not even notice that you have one. That's a problem too.

06:07 K Dalton

Yeah, that's a great point. And you're right, classically that bullseye rash or what's known as erythema migraines, and it literally is a larger red circle with a small little circle inside of it, looks like a bullseye. That used to be the classic definition of Lyme disease and that you had Lyme disease. Now that's still the case in that if we see that, that is pretty sensitive to Lyme disease. You can still have Lyme disease and not have that bullseye rash. And in fact, it's actually getting less prevalent in that we used to see about 75, 80% of Lyme cases had that bullseye rash. Now we're only seeing about 60% of cases have this type of rash. And added to that in that Lyme disease and other tick-borne diseases as well can present like a lot of other diseases, even just something simple as the flu and that you may

feel achy, you may have a headache, may show fatigue or just general tiredness and achiness. That can be signs of a tick-borne disease. However, you just may think that it is a common flu or a cold or another type of illness. And so, detection and diagnosis of these tick-borne disease is really challenging.

07:29 K Dalton

And we know that there is a lot of underreporting, and that people won't necessarily go to their providers. And if they do go to their doctors, the doctors may not automatically test for these tick-borne pathogens or infectious agents. So, we know that even though it is common right now, it's probably a much worse situation than what our data is showing.

07:54 E Ritchie

A lot of times recommendations will be to, if you're concerned, go to your provider. But it's the practical side of that. Usually, they won't test you unless you had a tick on you. What would you recommend if you suspect that you might have been exposed to a tick-borne disease, despite not finding a tick on your body?

08:18 K Dalton

Yeah, that's a great point. And especially going back to how these nymph ticks are so small, it's very frequently that you might not see the actual tick source of your likely possible disease. I think it really just means that these farmers and other outdoor workers need to be advocates for themselves when they go to their providers, letting their doctors and clinicians know that "Hey, I am a farmer, I am an outdoor worker, I am possibly more at risk of tick-borne disease."

It will depend on the provider but just making sure that they are aware that this could be a possible cause of whatever illness you are facing right now. And for yourself as well. If you are feeling achy and under the weather, it could absolutely just be the flu but also keep in mind that this could be something more severe, something like a tick-borne disease.

09:18 E Ritchie

We did an episode back in 2024, where we talked a little bit about the sensitivity and specificity of the Lyme's disease test. Do you know if there's been any progress on that front? And do those other tick-borne diseases have the same issue with their testing?

09:36 K Dalton

Yes, absolutely. It is low specificity in that if you are positive, it may not mean you are specifically positive for Lyme, as well as low sensitivity in that just because you are negative doesn't mean you could actually have the disease. It is definitely true for Lyme, but it's also true for a lot of these other disease conditions. We're also seeing a little bit of like cross contamination where you may show positive for like an Ehrlichia disease, but it's actually a rickettsial disease that you have, which is challenging because sometimes they may need different treatments for it. We also know that co-infection is actually a concern where people can have Rocky Mountain spotted fever in addition to anaplasma at the same time. And in fact, ticks themselves can carry more than one disease.

There is definitely a lot of complexity in understanding the risk factors, but then also on the clinical side, really figuring out what they have and how to treat them most appropriately.

10:43 E Ritchie

Lastly, can you tell us about your new research study?

10:47 K Dalton

~~A~~s we've been going through this background, I've been mentioning that there is a lot that we don't know about farmers in general and specifically Midwest farmers about what their risk factors are, what their different practices are, what their attitudes and concerns are with regards to tick-borne diseases, but then most importantly, what can we do to help prevent these illnesses in our farmers and farm families? And that's why I'm really excited that we are going to be starting a new study that is essentially looking at this

phenomenon and hopefully really getting concrete recommendations to protect our farmers and farm families. And so, if there are any farmers on the call listening and want to be involved with this, Libby can post a link to our survey that is open now. It's gonna be open spring all throughout the summer 2026.

11:45 K Dalton

We would love to hear your opinions and concerns and your history and what your overall experience has been and helped contribute to prevention measures that will protect you and your community members. Added bonus for those who do complete the survey. Surveys should take about 10, 15 minutes to complete. You will get a $20 Visa gift card as a sign of appreciation for your contribution to this study, in addition to contributing valuable knowledge to hopefully minimize the risk of tick exposure and tick-borne disease in Midwestern farming populations.

12:24 E Ritchie

Yes, we will include that link in the resources for this episode. We'll make that very available to any of our listeners. And can other people who aren't farmers share that link with farmers that they know?

12:38 K Dalton

Absolutely. Please feel free to share widely, whether you are a rural resident, but who has farming neighbors and colleagues and friends and family, as well as farmers that take the survey, please feel free to share this widely with your other colleagues. We want to try to get as much diverse engagement as possible.

12:58 E Ritchie

And is this specific to our Iowa farmers?

13:02 K Dalton

It's a great question. While we are specifically focusing on Iowa, we know that ticks don't follow exact state lines, so we are open to any Midwest region farmers overall. I will say farmers doesn't necessarily have to be large scale farming. This can be small hobby, subsidence level farming as well too. Again, we want as many diverse views as possible.

13:30 E Ritchie

This conversation provides another great example of how important it is for Midwestern farmers to pay attention to, and advocate for, their own health. Thanks, Dr. Dalton, for sharing specific actions that our listeners can take to successfully protect themselves and their families against tick-borne diseases, like wearing protective clothing and showering after fieldwork. We wish you the best of luck with your research and look forward to hearing about the results.

14:00 E Ritchie

You can help improve prevention for your entire community. By participating in ongoing research, you're contributing to a better understanding of how tick-borne diseases affect farmers across the Midwest—and how we can reduce those risks moving forward. To take part in Dr. Dalton's study and share your experience, check out the link in this episode's resources.

14:28 E Ritchie

Listen in on the *FarmSafe* podcast to join in on the conversation about keeping safe on the farm.

We want to hear from you. Share your stories about health and safety issues on the farm, about injuries that made you change the way you work, or about the ways you keep yourself and others safe on your farm. Also let us know if there's questions you have or topics that you want to hear about on the air. You can visit our website, gpcah.org, or email us.

Original music for the *FarmSafe* podcast was written and performed by Ben Schmidt. This work was funded by the Centers for Disease Control and Prevention as part of the National Institute for Occupational Safety and Health's Great Plains Center for Agricultural Health.

Episode Resources

- Check Your Body for Ticks, **Graphic,** GPCAH
- Kathryn Dalton's Tick Study, Webpage
- Tick Study Post Card

Photo